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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,807	09/05/2003	Andreas Kolbe	7421 US	7113

30078 7590 01/30/2008

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EXAMINER	
MAIS, MARK A	

ART UNIT	PAPER NUMBER
2619	

MAIL DATE	DELIVERY MODE
01/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/655,807	KOLBE ET AL.	
	Examiner	Art Unit	
	Mark A. Mais	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The term "passively tapping" in claims 1, 4, and 14 is a relative term which renders the claims indefinite. The term "passively" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, the claimed invention physically taps into physical lines. Applicants' Specification sheds little light as what "passively tapping" is [although Applicants' Specification does state that the information transmitted on the lines of a telecommunications system is not affected by monitoring (page 4, lines 17-19), it is unknown what the subjective terminology "not affected" means with any specificity or particularity]. For examination purposes the examiner will not attempt to discern what specific meaning "passively tapping" can be attributed because "passively tapping" can be interpreted as any one of a myriad of possible/discernable physical connections. For example, does a passive tap mean that it prevents (a) line attenuation; (b) the addition of noise in the physical lines; or (c) any type of feedback? Does a passive tap mean that it prevents frame mis-sequencing and/or data loss? Does a passive tap mean that that it prevents timing differences (time skew) from being introduced into the line? Does a passive tap mean that it prevents frame misalignment or skew?

Does a passive tap mean that is undetectable to any other device connected to the physical links? Does a passive tap mean that the need for sending additional frames (e.g., frame stuffing) is alleviated? Does a passive tap require that the data packets (IMA streams) be delivered in sequence? If the passive tap can receive IMA streams out-of-sequence, can a passive tap handle anti-wiretapping algorithms (e.g., Koga, USP 6,470,015)? If the passive tap can receive IMA streams out-of-sequence, can a passive tap handle any other method of admission control, IMA-ID enforcement, frame offsetting, frame re-sequencing or frame re-ordering? Does a passive tap mean that it still operates with both slow-link addition/deletion and fast-link addition/deletion? Moreover, after analysis, what is done with the determination of the virtual links [e.g., bandwidth management/control, wiretapping, flow control, congestion prevention, etc.]?

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Vallee (USP 6,894,977).

5. With regard to claim 1, Vallee discloses a method of monitoring a data transmission having a plurality of physical links between two network nodes **[Fig. 2, multiple physical links (PNNI) between both ATM Inverse Multiplexers (AIMs)]**, corresponding ones of the physical links being combined to form a virtual link and data transmitted between the two network nodes being distributed to the individual physical links **[Fig. 4, virtual links 1 through N]**, with data packets, containing affiliation information about the virtual link to which the corresponding ones of the physical links belong being transmitted on the physical links between the two network nodes during the data transmission **[Fig. 10, ICP packets with cell ID and (physical) link ID sent between both AIMs; col. 8, lines 55-61]**, comprising the steps of:

a) *passively* tapping into the physical links by connecting a monitoring device to each of the physical links **[Fig. 9; inherent in order to make a link reconfiguration determination, col. 7, lines 25-35]**;

b) receiving the data packets transmitted between the network nodes over the tapped physical links at the monitoring device **[Fig. 9, either one of the AIMs receives the ICPs (col. 8, lines 55-61)]**;

c) extracting in the monitoring device the affiliation information from the received data packets **[from the ICP packets, cell ID and the link ID are extracted, col. 8, lines 55-61]**; and

d) analyzing the extracted affiliation information to determine the corresponding ones of the physical links that are combined to form the virtual link **[Fig. 11, different nodes use different links to transfer data between themselves (i.e., analysis leads to different groupings), col. 8, line 61 to col. 9, line 2]**.

6. With regard to claim 2, Vallee discloses the step of analyzing the extracted affiliation information in order to recognize the addition of another one of the physical links to the virtual link **[col. 7, line 31 (new link added)]**.

7. With regard to claim 3, Vallee discloses the step of analyzing the extracted affiliation information in order to recognize the removal of one of the corresponding ones of the physical links from the virtual link **[col. 7, lines 32-35 (link removed or link failure)]**.

8. With regard to claim 4, Vallee discloses that in a bi-directional data transmission between the two network nodes the virtual link comprises a first virtual link from a first to a second of the network nodes having the same affiliation information as a second virtual link from the second to the first network node **[Figs. 2 and 4]** and further comprising the step of:

passively connecting the physical links from the plurality of physical links on which data are transmitted from the first network node to the second network node to a first interface of the monitoring device **[Fig. 4, the AIMs of the nodes transport ATM cells to each other]**; and

passively connecting physical links from the plurality of physical links on which data are transmitted from the second network node to the first network node to a second interface of the

monitoring device **[Fig. 11, either (a) nodes A and B or (b) nodes A and C transport ATM cells to each other]**.

9. With regard to claim 5, Vallee discloses that in a bi-directional data transmission between the two network nodes wherein the virtual link comprises a first virtual link from a first to a second of the network nodes having the same affiliation information as a second virtual link from the second to the first network node **[Figs. 2 and 4]** with the data being encoded in accordance with a transfer protocol that has several layers **[ATM layer]** and with the data transmitted on a single physical link of the virtual link not being encoded according to the highest layer **[physical layer OAM cell, col. 5, lines 5-13]**, and wherein the analyzing step comprises the steps of:

dl) assigning a selection of the physical links which transfer the same affiliation information to the first virtual link **[multiplexes multiple T1/E1 links, col. 4, lines 57-59]**;

d2) recognizing an information channel transmitted on the first virtual link and recognizing the information structure present there **[can be defined for UNI, PNNI, and BICI, col. 4, lines 66-67; Fig. 11, different nodes use different links to transfer data between themselves, col. 8, line 61 to col. 9, line 2]**;

d3) forming the information resulting as a consequence in a higher layer **[Fig. 11, different nodes use different links to transfer data between themselves, col. 8, line 61 to col. 9, line 2 (based on need)]**;

d4) analyzing the information of the higher protocol layer in order to examine whether the selection of physical links actually form the first virtual link **[comparing group status at start-up (col. 9, lines 22-23) and status change indications (col. 9, lines 13-14)]**;

d5) if the result of this examination in step d4) is positive, assigning the selection of physical links of step dl) as the first virtual link **[no change at start-up as long as the "necessary" number of links are working, col. 9, lines 32-40]**;

d6) if the result of the examination in step d4) is negative, repeating steps dl) to d4) with different selections of physical links until the result of step d4) is that the physical links forming the first virtual link have been determined **[testing to see that there are actually enough "necessary" number of links, col. 9, lines 22-28]**.

10. With regard to claim 6, Vallee discloses the step of assigning the physical links which transmit the same affiliation information as the determined virtual link to the second virtual link which exists between the same network nodes but transmits in the opposite direction to the first virtual link **[Fig. 11, different nodes use different links to transfer data between themselves, col. 8, line 61 to col. 9, line 2; Fig. 15, same affiliation information, col. 9, lines 46-49]**.

11. With regard to claim 7, Vallee discloses the step of combining sequence information in the data packets which provides information on how the data transmitted on the individual physical links of the virtual link are assembled to form a continuous data stream; and wherein the analyzing steps comprise the steps of:

analyzing the sequence information within the monitor device **[each node (AIM) uses the ICP (AIM SN) to determine sequence numbers, col. 6, lines 43-45; col. 8, lines 55-61]**;

compiling the data transmitted on the individual physical links into the continuous data stream, taking account of different propagation delays **[able to adjust up to 32 milliseconds for link delays in ATM streams, col. 4, lines 60-62]**; and

making the continuous data stream available at an output **[delivery of ATM streams is inherent to inverse multiplexing (and demultiplexing)]**.

12. With regard to claim 8, Vallee discloses that the data packets are ATM cells **[delivery of ATM streams is inherent to inverse multiplexing (and demultiplexing)]**, the plurality of physical links are combined according to the IMA specification to form the virtual link **[Fig. 4, virtual links 1 through N; IMA protocol, col. 1, lines 61-64]**, the affiliation information is a suitable selection of information transmitted in ICP cells that are classified as B and C in the IMA specification **[physical layer OAM cell, col. 5, lines 5-13; status and control, col. 9, lines 13-59]**, and the sequence information is information transmitted in the ICP cells that is classified as A in the IMA specification **[Fig. 10, ICP packets with cell ID and (physical) link ID sent between both AIMs; col. 8, lines 55-61]**.

13. With regard to claim 9, Vallee discloses that the transfer protocol is the AAL5 protocol and wherein in the analyzing step length information for transmitted AAL5 PDUs and/or a CRC32 check sum are analyzed **[inherent to ATM adaption of connectionless variable bit rate (VBR) data using AAL5]**.

14. With regard to claim 10, Vallee discloses that the transfer protocol is the AAL2 protocol and wherein in the analyzing step the length of a payload of a CPS packet, which extends over more than one ATM cell is compared with an offset field of a subsequent cell and/or a sequence number is analyzed by transmitted AAL2 cells **[inherent to ATM adaption of connection-oriented variable bit rate (VBR) data using AAL2]**.

15. With regard to claim 11, Vallee discloses that the data packets are ATM cells, the plurality of physical links are combined according to the IMA specification to form the virtual link, the affiliation information is a suitable selection of information transmitted in ICP cells that are classified as B and C in the IMA specification **[physical layer OAM cell, col. 5, lines 5-13; status and control, col. 9, lines 13-59]**, and sequence information is information transmitted in the ICP cells that is classified as A in the IMA specification **[Fig. 10, ICP packets with cell ID and (physical) link ID sent between both AIMs; col. 8, lines 55-61]**.

16. With regard to claim 12, Vallee discloses that the transfer protocol is the AAL5 protocol and wherein in the analyzing step length information for transmitted AAL5 PDUs and/or a CRC32 check sum are analyzed **[inherent to ATM adaption of connectionless variable bit rate (VBR) data using AAL5]**.

17. With regard to claim 13, Vallee discloses that the transfer protocol is the AAL2 protocol and wherein in the analyzing step the length of a payload of a CPS packet, which extends over more than one ATM cell is compared with an offset field of a subsequent cell and/or a sequence

number is analyzed by transmitted AAL2 cells **[inherent to ATM adaption of variable bit rate (VBR) data using AAL2]**.

18. With regard to claim 14, Vallee discloses a device for monitoring a data transmission over a plurality of physical links between two network nodes **[Fig. 2, multiple physical links (PNNI) between both ATM Inverse Multiplexers (AIMs)]**, corresponding ones of the physical links being combined to form a virtual link, with data transmitted between the two network nodes being distributed to individual physical links **[Fig. 4, virtual links 1 through N]** and with data packets containing affiliation information about the virtual link to which the corresponding ones of the physical links belongs being transmitted over the physical links between the two network nodes during the data transmission **[Fig. 10, ICP packets with cell ID and (physical) link ID sent between both AIMs; col. 8, lines 55-61]** comprising:

a plurality of connections for *passively* tapping into the physical links **[Fig. 9; inherent in order to make a link reconfiguration determination, col. 7, lines 25-35]**;

means for receiving the data packets transmitted on the plurality of physical links via the plurality of connections **[Fig. 9, either one of the AIMs receives the ICPs (col. 8, lines 55-61)]**;

means for extracting the affiliation information from the data packets *without having to re-transmit the data packets* **[from the ICP packets, cell ID and the link ID are extracted, col. 8, lines 55-56; discarded packets cause a re-adjustment of the receiver buffering system (thus, no re-transmission) and/or the link is removed, col. 7, line 58 to col. 8, line 6]**; and

means for analyzing the extracted affiliation information to determine the corresponding ones of the physical links which are combined to form the virtual link **[Fig. 11, different nodes**

use different links to transfer data between themselves (i.e., analysis leads to different groupings), col. 8, line 61 to col. 9, line 2].

Response to Arguments

19. Applicants' arguments filed on November 16, 2008 have been fully considered but they are not persuasive.

20. With respect to claims 1, 4, and 14, Applicants state that tapping, relative to the invention, conveys an "unobtrusive" connection between two nodes **[See Applicants' Amendment dated November 16, 2007, page 8, paragraph 2]**. As noted in the rejection under 35 USC 112, paragraph 2 above, the term "passively tapping" in claims 1, 4, and 14 is a relative term which renders the claims indefinite. The term "passively" (as well as "unobtrusively") is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

21. With respect to claims 1, 4, and 14, Applicants state that the Vallee performs active monitoring and argue, apparently, that the claimed invention does not **[See Applicants' Amendment dated November 16, 2007, page 8, paragraph 2]**. Specifically, that Vallee sends test patterns and that Applicants' invention does not **[See Applicants' Amendment dated November 16, 2007, page 8, paragraph 3]**. The examiner respectfully disagrees.

22. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., does not send test patterns) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

23. With respect to claim 14, Applicants state that the device disclosed in Vallee is located at a node and argue, apparently, that the claimed invention can only be located between two nodes **[See Applicants' Amendment dated November 16, 2007, page 8, paragraph 2]**. The examiner respectfully disagrees.

24. First, in response to applicant's arguments, the recitation "located between two network nodes" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

25. Second, the broadest reasonable interpretation of the claim limitation "located between two network nodes" is not specific as to what nodes or types of nodes are meant to be encompassed by such a limitation. Are the nodes only located in one linear link/connection (versus the

multiple connections in a spanning tree network, for example)? Does the claim limitation require that the two nodes being monitored be two ATM edge devices/gateways? Can the two nodes include an ATM edge device/gateway and a signaling network device (e.g., SS7 signaling)? Can the two nodes include an ATM edge device/gateway and a line repeater? Can the two devices include two line repeaters?

26. Third, ATM links, such as tunnels, have permanent Virtual Paths (VPs) consisting of multiple Virtual Channels (VCs)—the VCs are provisioned out based on (a) service contracts, (b) traffic shaping for the same service categories, and (c) hierarchical support of multiple service categories. Placing an ATM router (or ATM repeater; or ATM network analyzer) in between two other ATM routers would meet the independent claims because such a configuration does not require ATM Inverse Multiplexing (AIM). The examiner understands that AIM is required for Applicants invention.

Conclusion

27. Accordingly, **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

28. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) Iliev et al. (USP 5,459,720), System for internetworking data terminal equipment through a switched digital network.

(b) Vallee et al. (USP 5,608,733), ATM Inverse Multiplexing.

(c) Vallee (USP 6,205,142), Inverse multiplexing of digital data.

(d) Koga et al. (USP 6,470,015), System and device for preventing wiretap.

(e) Usukura et al. (USP 6,574,191), Line switching system and method.

(f) Heikkinen et al. (USP 6,621,794), Method and apparatus for measuring the timing difference between physical IMA links and for delivering a time difference to the IMA layer.

(g) Kolbe (USP 7,146,537), Protocol test device including a network processor.

(h) Multiple T1 Channel inverse multiplexing method and apparatus.

(i) Lefebvre et al. (USP Patent Publication 2001/0004350), Network status reporting method and a communications network.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Mais whose telephone number is 572-272-3138. The examiner can normally be reached on M-Th 5am-4pm.

31. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

32. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAM
January 17, 2008

1/28/08
WING CHAN
SUPERVISORY PATENT EXAMINER